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UNITED STATES
TELEPHONE
ASSOCIATION

***Ex parte* Notice**

July 28, 1997

William Caton
Secretary
Federal Communications Commission
1919 M Street, NW
Room 222
Washington, DC 20554

RE: CC Docket No. 96-128, Pay Telephone Compensation

Dear Mr. Caton:

Attached is an *ex parte* filing made to Michael Carowitz of the Common Carrier Bureau Enforcement Division as a follow-up to USTA's meeting on June 18, 1997, referenced in our June 19, 1997 *Ex parte* notice.

Should you have any questions, please do not hesitate to contact me at 202-326-7310.

Respectfully submitted,

Keith Townsend
Director, Regulatory Affairs & Counsel

cc: Michael Carowitz
Greg Lipscomb
Al Barna
Rose Crellin
Robert Spangler

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***Ex parte* Notice**

July 28, 1997

Michael Carowitz
Federal Communications Commission
Common Carrier Bureau
Enforcement Division
1250 23rd Street, NW
Washington, DC 20554

RE: CC Docket No. 96-128, Pay Telephone Compensation

Dear Mr. Carowitz:

As a follow-up to USTA's *ex parte* meeting with Commission staff on June 18, 1997, attached is a financial assessment of the cost of implementing codes to identify pay phones subject to compensation.

Please do not hesitate to contact me at 202-326-7310 with any questions or comments.

Respectfully submitted,

Keith Townsend
Director - Regulatory Affairs & Counsel

cc: William Caton
Greg Lipscomb
Al Barna
Rose Crellin
Robert Spangler

USTA *EX PARTE*

CC Docket No. 96-128, Pay Telephone Compensation

At our Ex Parte meeting with your office on June 18,1997, FCC staff requested that USTA provide information concerning the impact on the LEC industry in complying with paragraph 64 of the Reconsideration Order on Payphone Compensation. Specifically, "Each payphone must transmit coding digits that specifically identify it as a payphone, and not merely as a restricted line." The following white paper provides background information on ANI operation, payphone operation and the impacts of paragraph 64 of the reconsideration order.

BASIC ANI OPERATION:

ANI (Automatic Number Identification) ii digit pairs are used to provide information about the originating line, or class of service, to network elements (e.g. end offices, operator services systems, etc.) to be used in processing the call. ANI Information Digits (ANI ii) are sent to Operator Service Providers (OSPs) and Interexchange Carriers (IXCs) via connecting facilities using standard Equal Access ANI ii format. ANI ii digits are compatible with all types of signaling except pre-equal access Bell I signaling; ANI ii codes can be passed to IXCs or OSPs over Feature Group D or Equal Access Operator Services Signaling (EAOSS) trunks. There were 9 ANI ii pairs (all hard coded) initially defined with equal access signaling in 1983. Since that time, an additional 17 ANI ii pairs have been defined but only a limited number of those have actually been deployed and none on an industry-wide basis.

Bell I signaling must be used with non-equal access switches and uses a single information digit to identify classes of service having unique characteristics that require special treatment; coin control signaling requirements are indicated by ST (start) and STP (stop) indicators embedded in the Bell I signaling stream. This type of signaling, while still used in non-Equal Access offices, is incompatible with and cannot be modified to include ANI ii digit transmission.

EAOSS eliminates the ST and STP used in Bell I (non-equal access) signaling protocols to indicate coin signaling requirements. Hard coded ANI ii digit pair 27 is assigned to indicate special coin control requirements and hard coded ANI ii pair 07 to indicate originating lines (for example those used by "smart" pay phones or hospital patient services) requiring special billing or operator handling. Hard coded ANI ii digit pairs such as 00, 01, 02 and 06 are assigned to indicate unrestricted, multiparty, ANI malfunction and some hotel/motel services respectively. Hard coded ANI ii digits cannot be added or changed without significant switch modifications. The level of difficulty and expense varies among different types and vintages of switches.

BASIC PAY PHONE OPERATION:

The two basic types of pay phones, electro-mechanical ("dumb" sets) and microprocessor controlled ("smart" sets) used in North America interact very differently with the telephone

network. The "dumb" pay phones that comprise much of North America's embedded pay phone base are directly controlled by special signaling provided by the network; this is termed "coin control signaling". Access lines providing coin control signaling of this type are referred to as coin control signaling access lines (CCSAL). Collection and return of coins in "dumb" sets is controlled by network signals. The network also depends on signals from "dumb" pay phones to recognize that required coin deposits are present in the pay phone. The "dumb" sets cannot function properly on service lines that are not equipped to provide and receive the specialized signaling required for "dumb" payphones.

"Smart" or "coinless" payphones are connected to service lines that utilize standard terminal equipment protocols (typically B1 lines). These lines do not have any capabilities to provide and receive control signals required by "dumb" payphones. For the purpose of this document, access lines of this type are referred to as non-coin control signaling pay phone access lines (NCCSPPAL). "Smart" and "coinless" pay phones are incompatible with the network-based coin control signaling required by "dumb" pay phones. The "smart" pay phones accomplish coin collection and return functions for local and sent paid (1+) toll calls internally via microprocessor based functions including coin detection, coin collection/return and dialed digit analysis for rating. It can be seen that they operate independently from the network functions. Local and sent paid (1+) calls are not possible from "smart" sets on network based coin control signaling access lines (CCSAL) because these sets cannot signal the network that the required coin deposit is present in the set.

Depending on the technical and service characteristics of lines served by equal access end offices[1], different ANI ii digits are assigned to each line. When calls are originated from a line, the serving central office sends the assigned ANI ii digit pair as part of the signaling stream to facilities connecting to the switch. Analysis of the ANI ii digits in combination with the telephone number of the originating line and an analysis of dialed digits can be used to determine the treatment accorded to each call. Because of their fundamentally different operating characteristics, it would be impossible to identify all payphone lines with a single ANI ii digit pair. In order to make such identification possible, extensive network modifications would be required to alter the means by which special originating line operating requirements, such as coin control, are communicated to various network elements for call processing purposes, as well as to redefine the actions necessary on receipt of the ANI ii digits.

[1] Non-equal Access end offices also send ANI digits, but only a single digit is supported, and the signaling format is different compared to equal access. (See previous discussion).

Within the industry, the Industry Numbering Committee (INC)[2] establishes the definitions that apply to each pair of ANI ii digits. The ANI ii Task Force has concluded, based in large part on AT&T's contribution, that a single pair of ANI ii digits does not meet the overall requirements for unique pay phone identification for per call compensation (PCC). Whether or not to implement a new ANI ii pair and the method of implementation (hard coding or FLEX ANI) is determined by the individual company based on its own business strategy and arrangements with other carriers.

Flex ANI has been developed by switch manufacturers as an alternative to the difficulty of implementing new hard coded ANI ii digit pair assignments. When Flex ANI is offered by the LEC, it is designed to be activated on a per CIC (carrier identification code) basis when specified by the IXC. The ability to offer Flex ANI on a carrier-specific basis anticipated that some IXCs would choose not to use Flex ANI. New or revised ANI ii pair assignments can be added by the LEC to end office switches equipped with Flex ANI. These new digits are transmitted only to IXCs that have specified Flex ANI for their facilities. Only one set of Flex ANI ii digit pairs can be specified per end office switch, therefore, all IXCs subscribing to Flex ANI ii from a given switch will receive the same set of ANI ii digit pairs.

ANI ii digit pair 27 for CCSAL (coin control) was initially assigned with equal access in 1983. Since then, ANI ii digits 70 and 29 have been assigned to NCCSPPAL (non coin control) and inmate lines respectively by NANPA (INC). Flex ANI facilitates the use of these ANI ii digits to assure reliable and unique identification of pay phones for PCC and fraud control purposes. The use of Flex ANI to implement new ANI ii pair assignments eliminates the ambiguity of identifying both non coin control pay phone lines (NCCSPPAL) and other types of services such as some hotel/motel, hospital, dormitory and some cellular services with the same standard ANI ii digits 07[3].

As with hard coded ANI ii, Flex ANI ii digits are sent to LECs and IXCs via connecting facilities using standard Equal Access ANI ii format but on an optional basis per carrier per end office switch. Also, like hard coded ANI ii, Flex ANI is compatible with all types of signaling except

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[2] The Industry Numbering Committee (INC) is one of the many consensus forums operating in the industry to resolve issues of concern. INC operates under the governance of the Carrier Liaison Committee (CLC). These forums are sponsored by the Alliance for Telecommunications Industry Solutions (ATIS).

[3] In the non equal access environment, 7 was the digit used for this broad spectrum of lines. With equal access, the equivalent identifier 07 was assigned.

pre-equal access Bell I signaling. Therefore, any switch capable of receiving equal access signaling compatible ANI ii pairs is able to receive the Flex ANI implemented ANI ii digits.

Bellcore (BCR) has issued a generic requirements document defining assignment of these digits, TR-TSY-00685 "Flexible ANI Information Digit Assignment, FDS 20-20-0100". The burden of equipping each and every end office to provide the capability to send these digits would vary widely; switches not capable of equal access operation would have to be replaced. Many vendors, including Lucent, Nortel, and Siemens offer Flex ANI operation that meets the BCR specification for their switch product line, but not all switches have been equipped for Flex ANI. The Nortel and Lucent operator service (OS) platforms are capable of using Flex ANI. The use of Flex ANI does not affect the technical aspects of pay phone operation.

IMPACT OF PROVIDING ONLY ANI ii SPECIFIC DIGITS:

The major impact of complying with paragraph 64 of The Payphone Reconsideration Order, specifically, "Each payphone must transmit coding digits that specifically identify it as a payphone, and not merely as a restricted line.", is the requirement that would require replacement of all non-equal access offices. According to the NECA 4 tariff, there are 4,500 non-equal access offices, 1,100 of those are electro-mechanical (SXS and X-Bar). All of the electro-mechanical offices would have to be replaced at an average cost of $400,000 per switch (1,100 X $400,000 = $440 Million). In addition, all of the digital non-equal access offices would have to be upgraded to equal access at an average cost of $35,000 per switch (3,400 X $35,000 = $119 Million).

These costs to upgrade existing digital switches is based on the presumption that they have been continuously upgraded during their service lives so that they can be equipped for ANI ii. If additional software generics would have to be installed, the costs for those switches would be increased. The costs quoted here are optimistic, because we believe that all existing switches have not been continuously upgraded. These assumptions yield a total of $559 Million to upgrade non-equal access offices to equal access status.

A major concern is that almost all of the offices involved serve rural communities, serve few if any smart payphones, and most do not have prisons located in their serving territory.

After switch change out or equal access upgrade, each of the 4,500 switches that would now be equipped for equal access would then have to be either hard coded with the additional ANI ii digit pairs 29 and 70 (27 is hard coded with equal access upgrade) or further upgraded to provide Flex ANI. The pricing information USTA has received for Flex ANI has varied from $4,000 to $14,000 per switch depending on the vendor. If we assume an average cost of $9,000 per switch (this assumes the switch is at the required software generic and no further implementation

charges apply), the cost for FLEX ANI would be ($9,000 X 4,500 = $40.5 Million). In addition, all existing equal access switches (21,959 per NECA 4 tariff) would have to be equipped with FLEX ANI ($9,000 X 21,959 = $198 Million). USTA believes that about 3,000 existing offices are now equipped for FLEX ANI; that would reduce the estimate by ($9,000 X 3,000 = $27 Million) or a total of $198 - $27 = $171 Million.

The total industry cost for FLEX ANI is $770.5 Million. [Non-equal Access Upgrades ($559 Million) plus FLEX ANI Upgrades ($171 Million) = $770.5 Million]

An alternative to FLEX ANI would be to hard code ANI ii pairs 29 for prison payphones and 70 for "smart" payphones (27 is already hard coded with equal access). The pricing information USTA has received for hard coding these ANI ii digits in existing equal access offices has varied from $8,000 to $29,000 per switch depending on the vendor. Assuming that the average cost is $18,000 the cost would be ($18,000 X 26,457 = 476.2 Million). This capability would have to be provided with a future switch generic or switch release; therefore, we know that at least one generic or switch release upgrade would be required as a prerequisite for this option.

The total industry cost for hard coded ANI ii is $1,035 Million. [Non-equal Acess Upgrades ($559 Million) plus hard-coded ANI ($476 Million) = $1,035 Million]

GENERIC UPGRADE CONCERNS

An assumption was made in developing these costs that in every case where a switch needed to be upgraded to provide equal access, FLEX ANI, or Hard Coded ANI ii Digit capability, the switch was at the proper generic or release. The result is that the total cost identified for scenario 1 and scenario 2 only identify those costs directly related to the features mentioned above and do not reflect the cost for additional feature included in the generic upgrades or new releases.

In the case of hard coding ANI ii Digits 29 an 70, this capability can only be provided with a future generic or release. The future generic or release will most likely provide additional capabilities, however, these additional capabilities may not be needed or usable. The typical cost for a generic upgrade or new release range from $125,000 to $500,000 depending on the hardware and software required. Even using the low end cost, the industry would be required to expend over $3 Billion for some features and services which may not be needed or usable. Even the figure of $3 Billion could be significantly understated because it assumes that only a single generic upgrade or release is required. Some switches would require multiple upgrades.

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CC Docket No. 96-128, Pay Telephone Compensation

ANI ii Only Alternatives

	Non-Equal Access Electro Mechanical	Non-Equal Access Digital	Equal Access	Total
Number of Switches	1,100	3,400	21,959	26,459
Existing ANI capability	7	7	07 and 27	
Upgrade to Equal Access	$440 Million for new switches	$119 Million for generic upgrade	N/A	$559 Million
Scenario 1- hard coding ANI ii 29 and 70	$440 Million for new switch equipped with equal access. $19.8 Million for hard coding ANI ii 29 and 70	$119 Million For upgrade to equal access $61.6 Million for hard coding ANI ii 29 and 70	$395.2 Million for hard coding ANI ii 29 and 70	$1,035 Million

Scenario 2 - using Flex ANI to provide ANI ii 27, 29 and 70	$440 Million for new switch equipped with equal access $9.9 Million for FLEX ANI	$119 Million for upgrade to equal access $30.6 Million for FLEX ANI	$171 Million for FLEX ANI	$770 Million